

Internship Posting Date: Spring 2010
Internship ID #: 10002



Intern Application Deadline: Until Project Completion

New Jersey Department of Environmental Protection Internship Opportunity

Internship: ☒ Summer ☒ Fall Semester ☐ Winter Break ☒ Spring Semester

Internship Type: ☐ Co-op* ☒ Credit-Bearing* ☐ Non-credit

Internship Pay: ☒ Non- Paid ☐ Paid Pay Rate:

Intern Level: ☒ Graduate School ☒ Undergraduate ☐ High School

Suggested Background or Knowledge: Environmental Science; Biology, Geology; and Chemistry with a working knowledge of GIS and Excel Software

DEP Program Area and Work Unit Offering the Internship: Division of Watershed Management – Bureau of Environmental Analysis and Restoration (DWM - BEAR)

Internship Location: 401 East State Street, Trenton, NJ 08625

Internship Project Description:

These are ongoing projects that will require at least one intern per semester to complete.

The Bureau of Environmental Analysis and Restoration provides internships on a semester basis to interns who have had coursework and proficiency in Geographic Information Systems and exposure to environmental science concepts. Because the bureau's mission is to develop technical tools and resources for watershed planning, protection and restoration, geographically located information is key to developing a greater understanding of both existing data collections and of the effectiveness of various watershed restoration projects.

Projects that interns may work on include the following:

- Best management practices (BMP's) are used to reduce non-point source pollution and restoring water quality and are funded through the 319(h) grant program. These BMP's include riparian buffer restoration and stormwater management basin retrofits. Interns would create a shapefile of all water quality stations associated with these projects and work towards uploading station information and data into the Water Quality Data Exchange database.
- The Department monitors for biological impairments through the Ambient Biological Monitoring Network (AMNET). In this project, for future biological TMDL efforts, interns would work on creating a GIS coverage of AMNET sites that delineates the contributing portion of the watershed to each site. Within each of these contributing areas, a breakdown of the most recent land use/land cover is also needed, e.g., percentages of urban, agricultural, forest, water, etc.
- To better serve the public, the Division is developing interactive watershed maps for each of the 20 Watershed Management Areas (WMA's). These maps would contain attribute tables that

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would link users to projects and their associated documents and photos while also allowing the Department to update status and attach new information.

- The New Jersey Watershed Ambassadors program has collected visual and biological assessment data each year that aids in the development and implementation of Total Maximum Daily Loads (TMDL) to address watershed pollutants. Interns would utilize information collected on impairments to locate areas of concern and create a data layer/shapefile of these sites.
- Microbial source tracking (MST) requires sampling various locations along an impaired waterway for pathogens (i.e. fecal coliform and e-coli bacteria) to determine pollutant levels. In this project, interns would combine this data with visual and biological assessment data collected by the New Jersey Watershed Ambassadors to identify sources of pathogens and help to identify management measures.

Intern responsibilities may include the following activities (depending upon the project):

- Reviewing and analyzing visual and biological assessment data;
- Depicting and verifying restoration project locations;
- Collaboration with the Department's GIS office;
- Developing interactive tables and maps; and
- Updating existing GIS data layers.

More information about the Division of Watershed Management can be found at
<http://www.state.nj.us/dep/watershedmgt/>

Estimated Project Duration and Suggested Weekly Work Schedule: Flexible – Commensurate w/ 3 or 4 credits

Internship Learning Objectives / Marketable Skills: ability to compile, assess and draw conclusions from data analysis

Description of DEP Program Area/Work Unit Offering the Internship:

Division of Watershed Management: The goal of the Division of Watershed Management (DWM) is nonpoint source (NPS) pollution control and comprehensive water resource management on a watershed basis. Towards that end, the DWM follows two paths. The first path is a rule approach for preventing water quality degradation, which employs regulations to achieve its goal. The second path is an action approach to remedy existing water quality problems, employing Total Maximum Daily Load (TMDL) determinations, NPS control (319) projects, and stream restoration efforts.

The Bureau of Environmental Analysis and Restoration (BEAR) develops technical “tools” for the use of the DWM and its partners in watershed planning, protection and restoration. Among those tools are: the development of TMDLs; the writing of rules and regulations including Stormwater Management Rules, Water Quality Management Planning Rules, Sewage Infrastructure Improvement Rules and portions of the Highlands Rules; and the development of environmental standards, technical or administrative guidance documents for rule implementation, model ordinances, and best management practices (BMPs).

Internship Hiring Contact: Rebecca Jones (609) 984-4423, Rebecca.jones@dep.state.nj.us

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Internship Sponsor: Kimberly Cenno, Supervisor or Patricia Ingelido, Principal Environmental Specialist

***For credit-bearing internships only:** Sponsor Phone Number and Email: (609) 633-1441
kimberly.cenno@dep.state.nj.us or patricia.ingelido@dep.state.nj.us

Please Respond With a Completed Application Form, Resume, and Cover Letter to:

New Jersey Department of Environmental Protection / Division of Human Resources
P.O. Box 408 / Trenton, NJ 08625
Attn: Internship Program
Email Address: Rebecca.Jones@dep.state.nj.us

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